VoIP Paging Amplifier Operations Guide

Part #*010965*

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VoIP Loudspeaker Amplifier Operations Guide 930185B
Part # 010965

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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including apmplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The procedures in this manual require Class 2 Wiring.

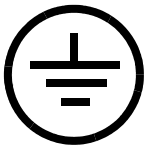
Warning

Electrical Hazard: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Warning

Electrical Hazard: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Pictorial Alert Icons

	General Alert *This pictoral alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.*
	Ground *This pictoral alert indicates a ground.*

Hazard Levels

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also alert users against unsafe practices.

Notice: Indicates a statement of company policy (that is, a safety policy or protection of property).

The safety guidelines for the equipment in this manual do not purport to address all the safety issues of the equipment. It is the responsibility of the user to establish appropriate safety, ergonomic, and health practices and determine the applicability of regulatory limitations prior to use. Potential safety hazards are identified in this manual through the use of words Danger, Warning, and Caution, the specific hazard type, and pictorial alert icons.

Revision History

Revision	Date Released	Description of Changes
A	10/16/2007	This is the first release of this manual.
B	4/18/2008	Adds the following table footnote to Table 2-4: "If set to high power, the unit will not power ON with 802.3af compliant hub/switch. You must use a power injector in this mode (CyberData part number 010867A)."

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1 Product Overview

The CyberData SIP-enabled Voice-over IP (VoIP) Paging Amplifier provides an easy method for implementing an IP-based overhead paging system for both new and legacy installations.

The Amplifier provides direct drive of a standard Horn speaker and supports a line out connector for connection to an external amplifier. The interface is compatible with most SIP-based IP PBX servers that comply with the SIP RFC 3261. For non-SIP environments, the Paging Amplifier can be configured to listen to multicast address and port number combinations to form paging zones.

1.1 Typical System Installation

Figure 1 illustrates how the VoIP Paging Amplifier (PoE) is normally installed as part of a public address system.

Figure 1. Typical Installation

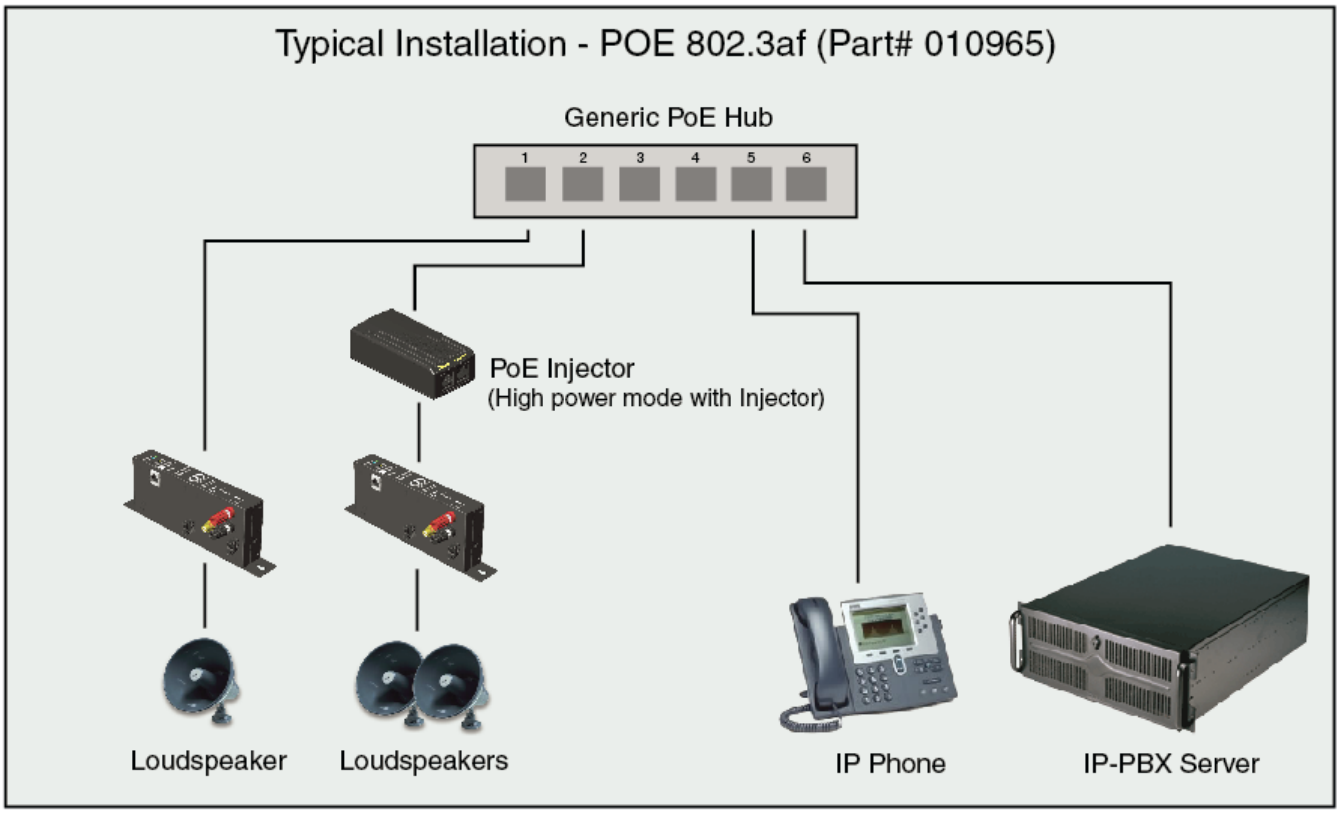


Figure 2. Typical Line-Out Installation

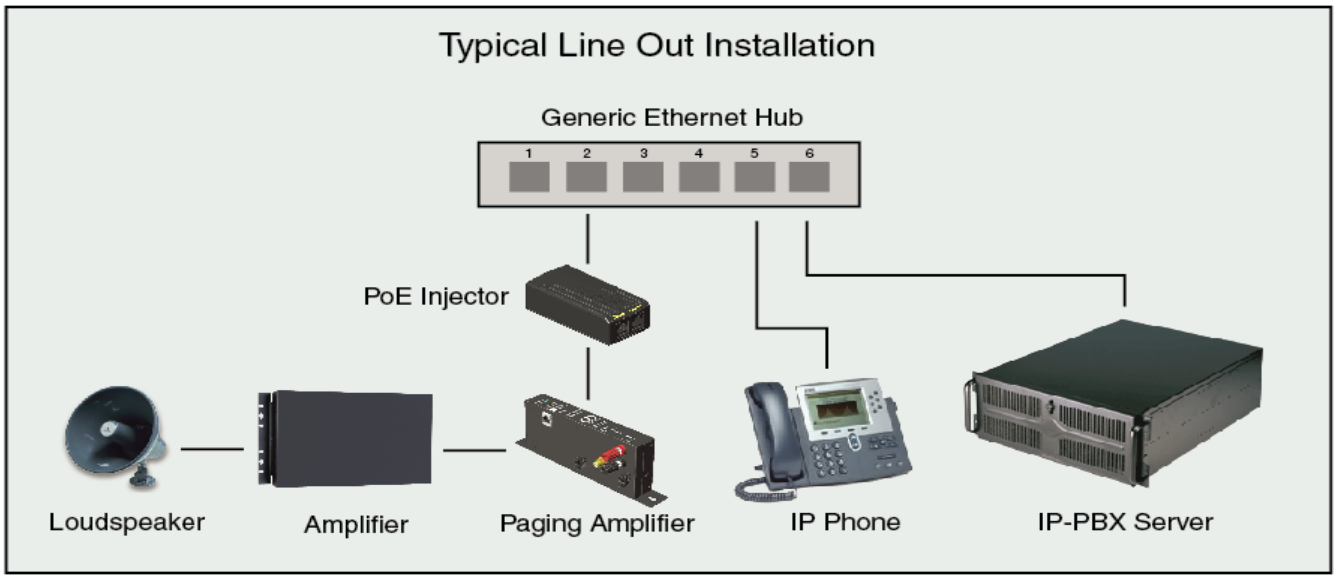
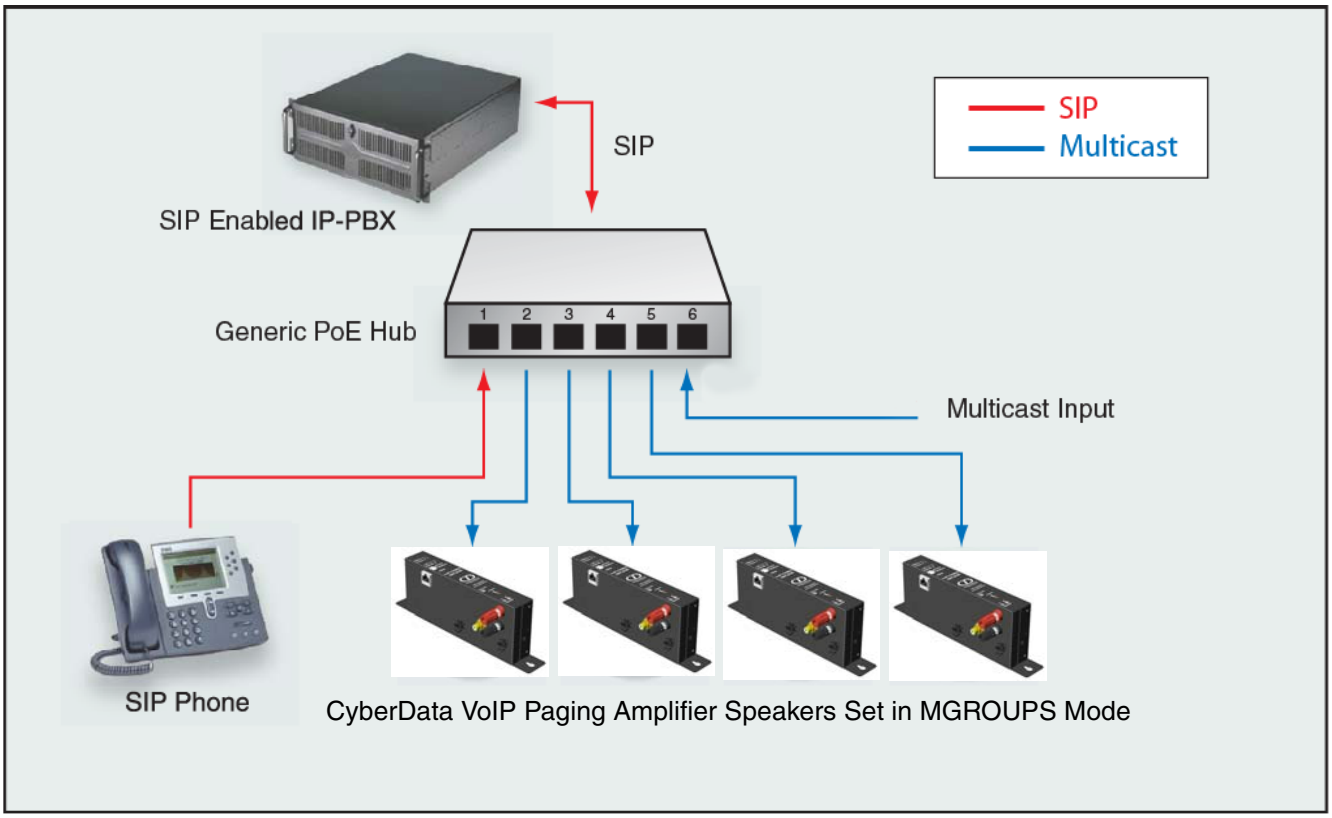
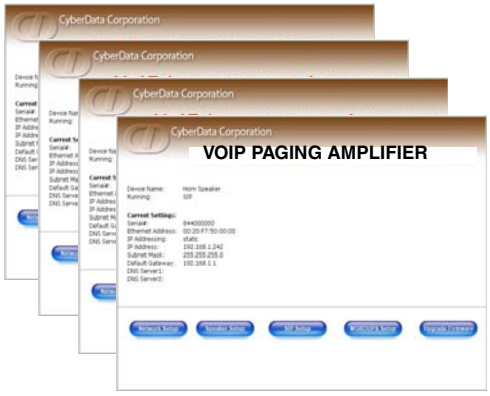


Figure 3. Public Address System—Multicast



1.2 Product Features



- *Multicast support*
- *SIP (RFC 3261) compatible*
- *Dual-Speed 10/100 Mbps*
- *Web-based configuration*
- *Web-based firmware upgradeable*
- *High-efficiency speaker driver*
- *PoE (Power-over-Ethernet)*
- *Supports 8 ohm horn speakers*
- *Line out support*
- *With one 8-ohm speaker, up to 8 watts output*
- *With external PoE power injector (Part #010867) and one 8 ohm speaker, up to 10 watts output.*
- *With external PoE power injector (Part #010867) and two 8 ohm speakers in parallel, up to 20 watts output.*

1.3 Supported Protocols

The Paging Amplifier supports:

- SIP
- Multicast
- HTTP Web-based configuration

  Provides an intuitive user interface for easy system configuration and verification of Paging Amplifier operations.
- DHCP Client

  Dynamically assigns IP addresses in addition to the option to use static addressing.
- TFTP Client

  Facilitates Web-based firmware upgrades of the latest Paging Amplifier capabilities.
- RTP
- RTP/AVP - Audio Video Profile
- Audio Encodings

  PCMU (G.711 mu-law)

  PCMA (G.711 A-law)

  Packet Time 20 ms

1.4 Supported SIP Servers

The following link contains information on how to configure the Paging Amplifier for the supported SIP servers:

http://www.cyberdata.net/support/voip/index.html

1.5 Product Specifications

Category	Specification
Sensitivity	96dB/1W/1M S.P. Level
Output	With one 8-ohm speaker, up to 8 watts output
	With external PoE power injector (Part #010867) and one 8 ohm speaker, up to 10 watts output.
	With external PoE power injector (Part #010867) and two 8 ohm speakers in parallel, up to 20 watts output.
Port Baud Rate	10/100 Mbps
Power Requirement	802.3af compliant
Protocol	SIP RFC 3261
Part Number	010965
Dimensions	1.26” x 9.45” x 3.13”
Weight	2.2 lbs.
Lineout	Output Signal Amplitudes 2.0 VPP maximum
	Output Level +2dBm nominal
	Total Harmonic Distortion 0.5% maximum

2 Installing the VoIP Paging Amplifier

2.1 Parts List

Table 2-1 illustrates the parts for each Paging Amplifier and includes a kit for mounting.

Table 2-1. Parts List

Quantity	Part Name	Illustration
1	Paging Amplifier Assembly	
1	Installation Quick Reference Guide	
1	Paging Amplifier Mounting Accessory Kit, RoHS (part #071057A) which includes: (2)Plastic Ribbed Anchors (2) #6 Sheet Metal Screws	

2.2 Paging Amplifier Setup

Set up and configure each Paging Amplifier *before* you mount it.

CyberData delivers each Paging Amplifier with the factory default values indicated in Table 2-2:

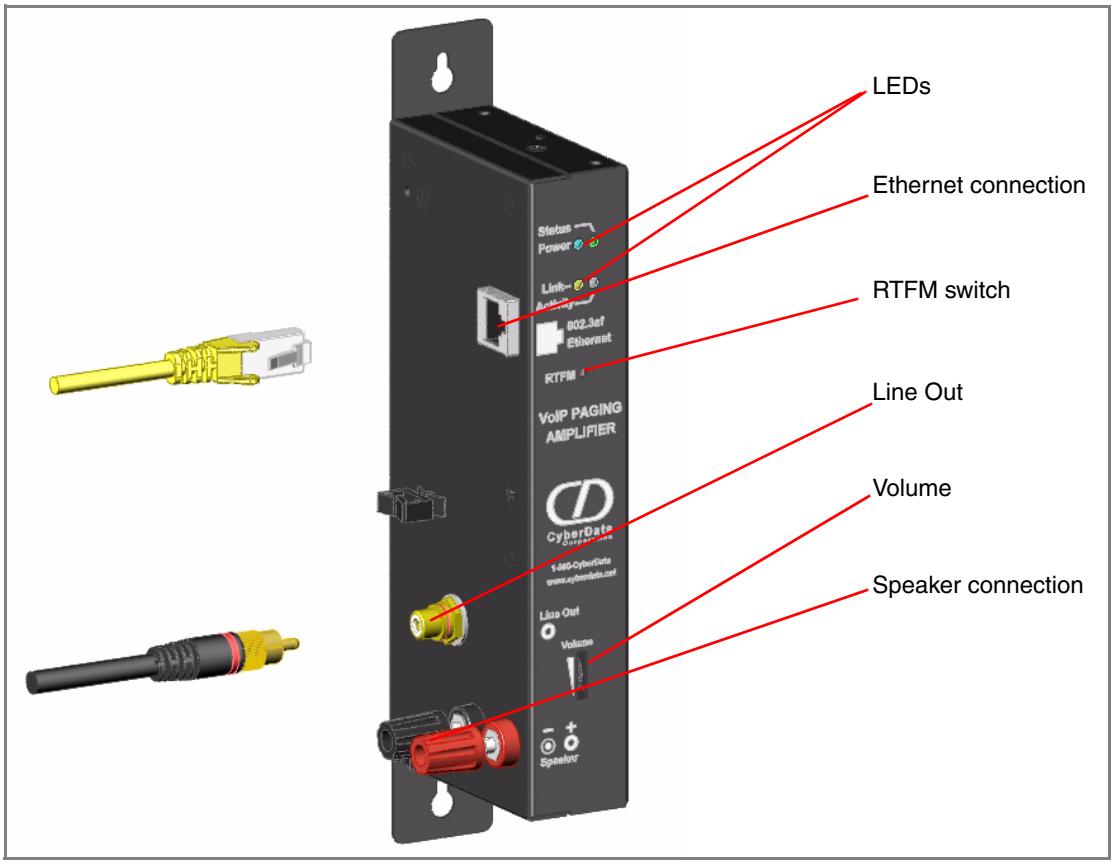
Table 2-2. Factory Default Settings

Parameter	Factory Default Setting
IP Addressing	static
IP Address	192.168.3.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask	255.255.255.0
Default Gateway	192.168.3.1

2.2.1 Paging Amplifier Components

Figure 2-1 shows the components of the Paging Amplifier (PoE).

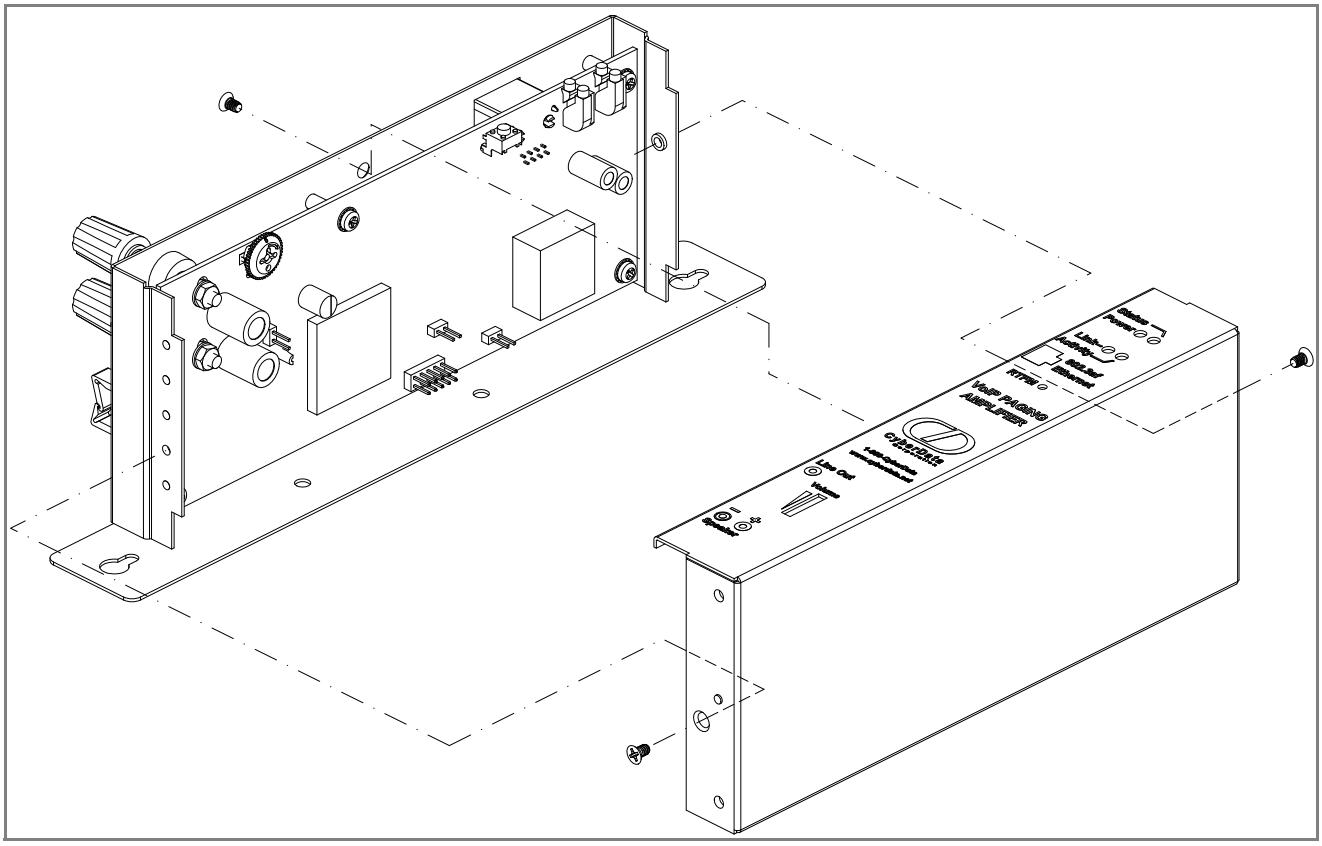
Figure 2-1. Paging Amplifier Components—PoE



2.2.2 Opening the Case to Access Jumpers

Use Figure 2-2 to see how to open the Paging Amplifier case to access the jumpers.

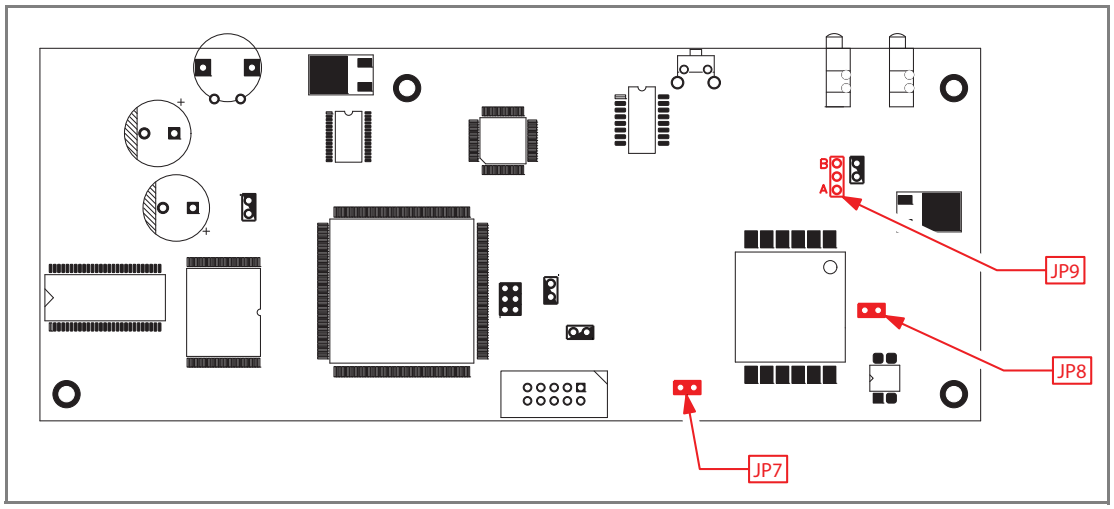
Figure 2-2. Opening the Case to Access Jumpers



2.2.3 Paging Amplifier Jumpers

See Figure 2-3 to identify the jumper and component locations.

Figure 2-3. Jumper Locations



See Table 2-3 and Table 2-4 for the jumper settings.

Table 2-3. Jumper Settings—Low Power—802.3af Compliant (Default)

Jumper	Setting
JP7	OFF -> Low Power (21V)
JP8	OFF -> Low Power (21V)
JP9	Position B -> Low Power

Table 2-4. Jumper Settings—High Power—Non-PoE Compliant[a]

Jumper	Setting
JP7	ON -> High Power (21V)
JP8	ON -> High Power (21V)
JP9	Position A -> High Power

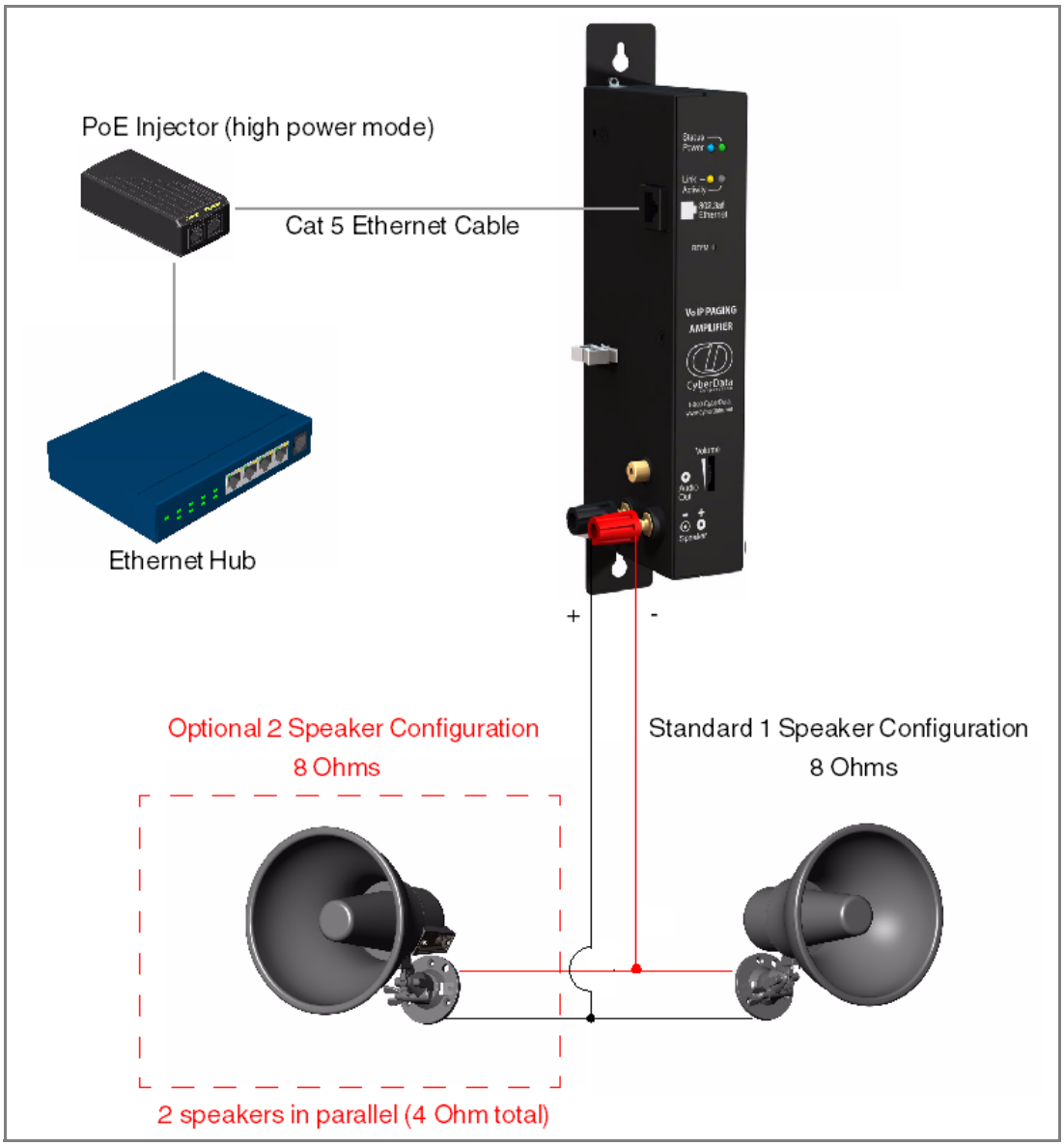
a.If set to high power, the unit will not power ON with 802.3af compliant hub/switch. You must use a power injector in this mode (CyberData part number 010867A).

2.2.4 Connecting the Paging Amplifier

Figure 2-4 illustrates how to connect the VoIP Paging Amplifier (PoE).

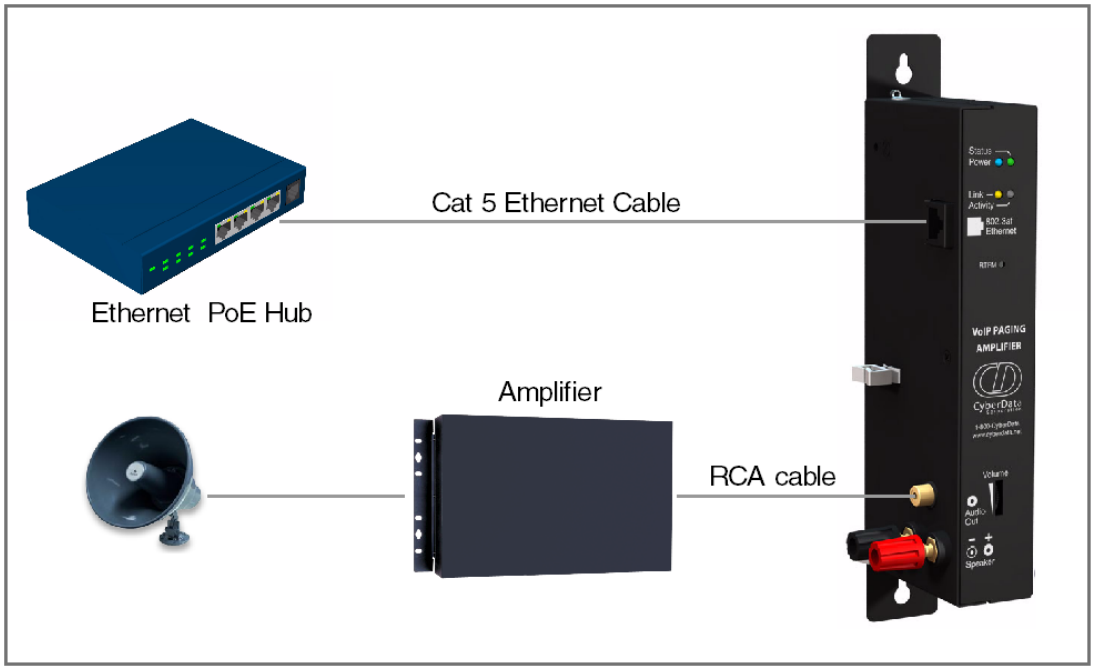
2.2.4.1 Using the Amplified Outputs

Figure 2-4. Using the Amplified Outputs



2.2.4.2 Using the Line Out Output

Figure 2-5. Using the Line Out Output



See Table 2-5 for details about the Paging Amplifier connections.

Table 2-5. Paging Amplifier Connections

Connection	Connection Details	Location
Loudspeaker	• Use two binding posts for up to 0.083 inch diameter loudspeaker wire.	SiP VoIP and PoE Speaker
Ethernet	• Use a RJ 45 cable.	SiP VoIP and PoE Speaker

2.2.4.3 Loudspeaker Type

Using the amplified output, the CyberData VoIP Paging Amplifier supports an 8 Ohm Bogen or equivalent unamplified loudspeaker.

Figure 2-6. Loudspeaker

2.2.4.4 Cabling/Wiring

Using the amplified output, you may connect a loudspeaker to a Paging Amplifier with a good quality speaker cable that is limited to 25 feet in length.

2.2.5 Confirm Operation

After connecting the Paging Amplifier to the ethernet hub, use the LEDs on the Paging Amplifier face to confirm that the Paging Amplifier is operational and linked to the network.

Figure 2-7. Paging Amplifier LEDs—Power and Link

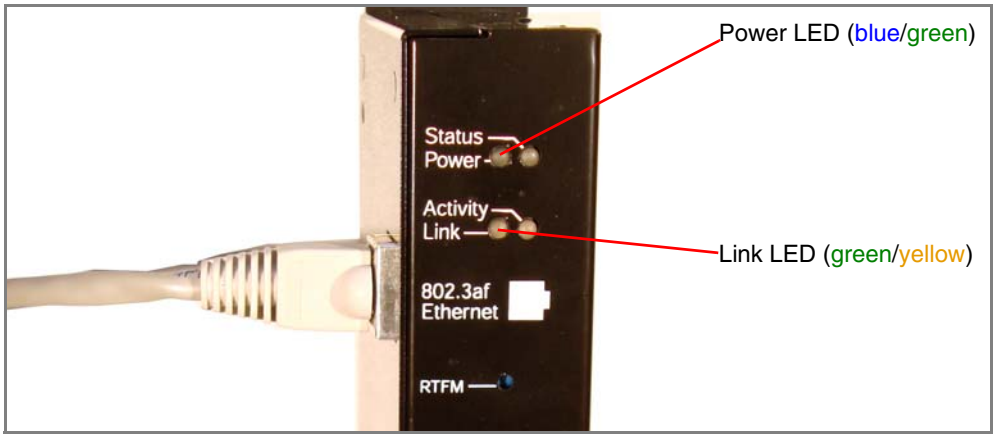
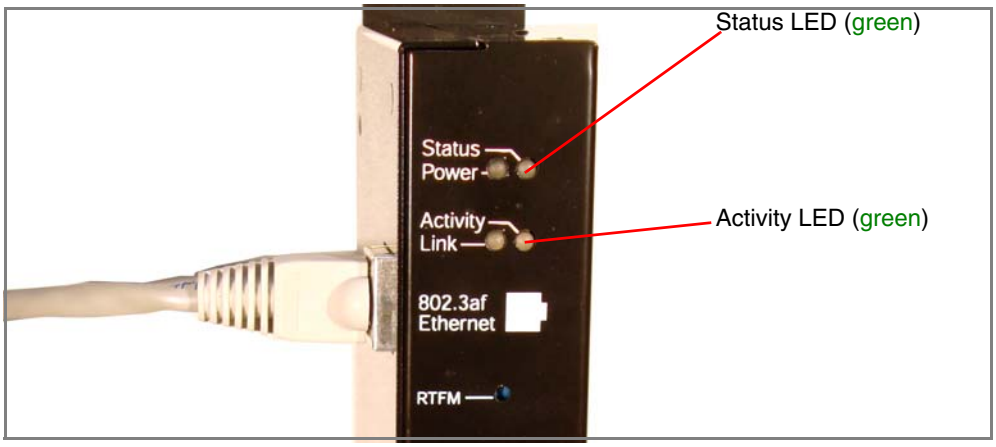


Figure 2-8. Paging Amplifier LEDs—Status and Activity



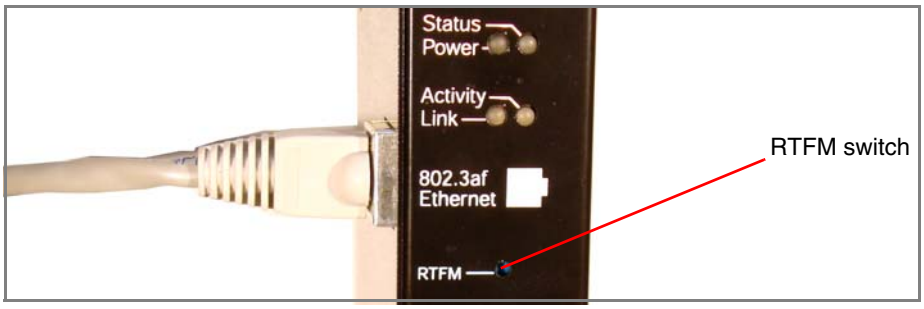
2.2.6 Confirm the IP Address, Test the Audio, and Check the Volume

Table 2-6. Paging Amplifier LEDs

LED	Color	Function
Power	Blue/Green	The power LED is illuminated a steady blue when the power is on and blue/green when the amplifier is in the high power mode.
Status	Green	After supplying power to the Paging Amplifier: 1. The green Status LED illuminates after approximately five seconds to indicate the start of the firmware verification and load process. 2. After approximately 15 seconds, the Status LED begins to blink at one second intervals to indicate the start of the firmware boot process. 3. After approximately 35 seconds, the Paging Amplifier beeps once to indicate that it is operational. 4. The Status LED will continue to blink at one second intervals to indicate normal operation.
Link	Green/Yellow	The Link LED is illuminated green for a 10Mb link or yellow/green for a 100Mb link when the network link to the Paging Amplifier is established.
Activity	Green	The Activity LED blinks to indicate network traffic.

When the Paging Amplifier is operational and linked to the network, use the Reset Test Function Management **(RTFM)** switch (Figure 2-9) on the Paging Amplifier face to announce and confirm the Paging Amplifier's IP Address, test that the audio is working, and check the volume.

Figure 2-9. RTFM Switch



To announce a Paging Amplifier's current IP address:

1. Press and hold the **RTFM** switch until it beeps (after one second).
2. Release the switch to hear the IP address announcement, and check the Paging Amplifier volume.

Caution

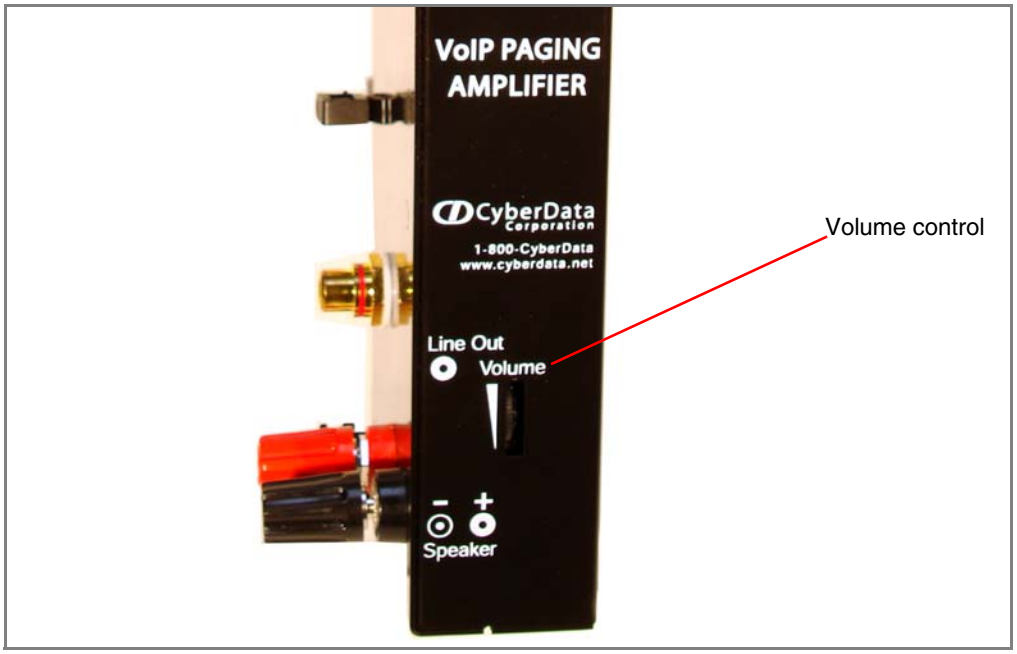
Equipment Caution: Pressing and holding the RTFM switch for longer than 20 seconds will restore the Paging Amplifier to the factory default settings. See Section 2.6, "Restore the Factory Default Settings".

2.2.7 Adjust the Volume

To adjust the Paging Amplifier volume, turn the **Volume** dial (Figure 2-10) on the Paging Amplifier face.

Note For the lineout volume, the volume is fixed and the volume control is done with the external amplifier.

Figure 2-10. Volume Control



2.3 Configure the Paging Amplifier Parameters

To configure the Paging Amplifier online, use a standard web browser.

Configure each Paging Amplifier and verify its operation *before* you mount it. When you are ready to mount a Paging Amplifier enclosure, refer to Appendix A, "Mounting the Amplifier" for instructions.

All Paging Amplifier are initially configured with the default IP settings indicated in Table 2-7.

When configuring more than one Paging Amplifier, attach the Paging Amplifiers to the network one at a time to avoid IP address conflicts.

Table 2-7. Factory Default Settings

Parameter	Factory Default Setting
IP Addressing	static
IP Address	192.168.3.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask	255.255.255.0
Default Gateway	192.168.3.1

2.3.1 Log in to the Configuration Home Page

1. Open your browser to the speaker IP address.

   For the initial configuration of the speaker, open your browser to the default IP address:

   http://192.168.3.10

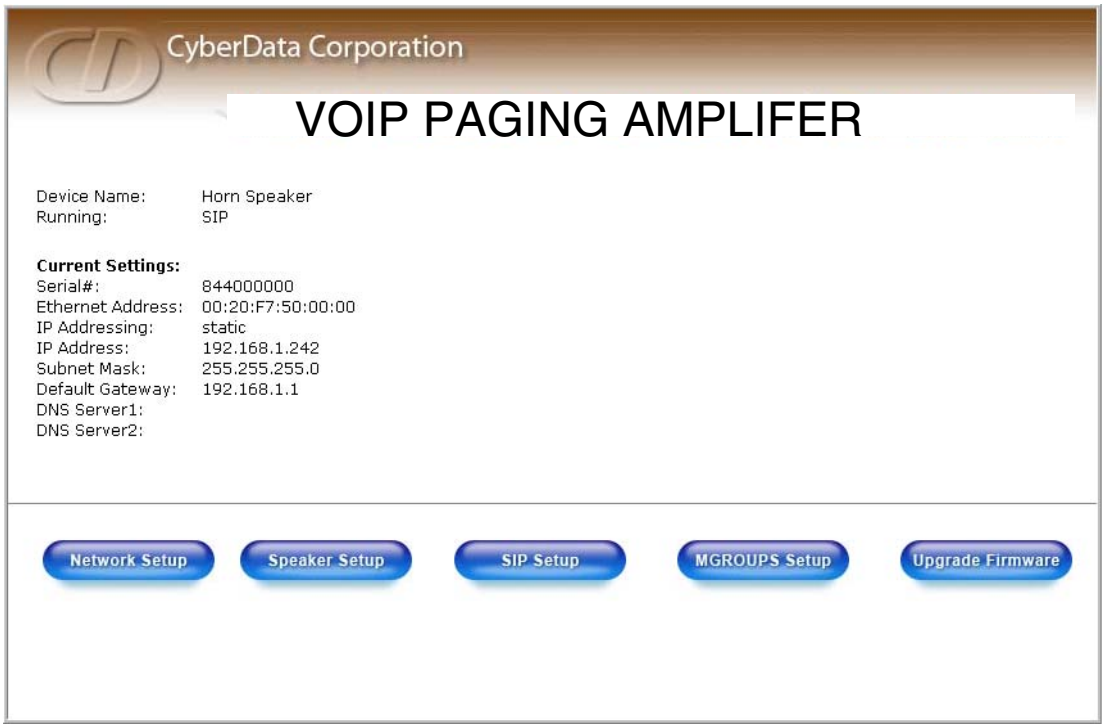
Note Make sure that the PC is on the same IP network as the Paging Amplifier.

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-11):

   Web Access Username: **admin**

   Web Access Password: **admin**

Figure 2-11. Home Page



3. On the **Home Page**, review the setup details and navigation buttons described in Table 2-8.

Table 2-8. Home Page Overview

Web Page Item	Description
Device Name	Shows the device name.
Running	Shows the current speaker function.
Serial #	Device serial number.
Ethernet Address	Device ethernet address.
IP Addressing	Shows the current IP addressing setting (**DHCP** or **static**).
IP Address	Shows the current IP address.
Subnet Mask	Shows the current subnet mask address.
Default Gateway	Shows the current default gateway address.
	Link to the **Speaker Setup** page.
	Link to the **Network Setup** page.
	Link to the **SIP Setup** page.
	Link to the **MGROUPS Setup** page.

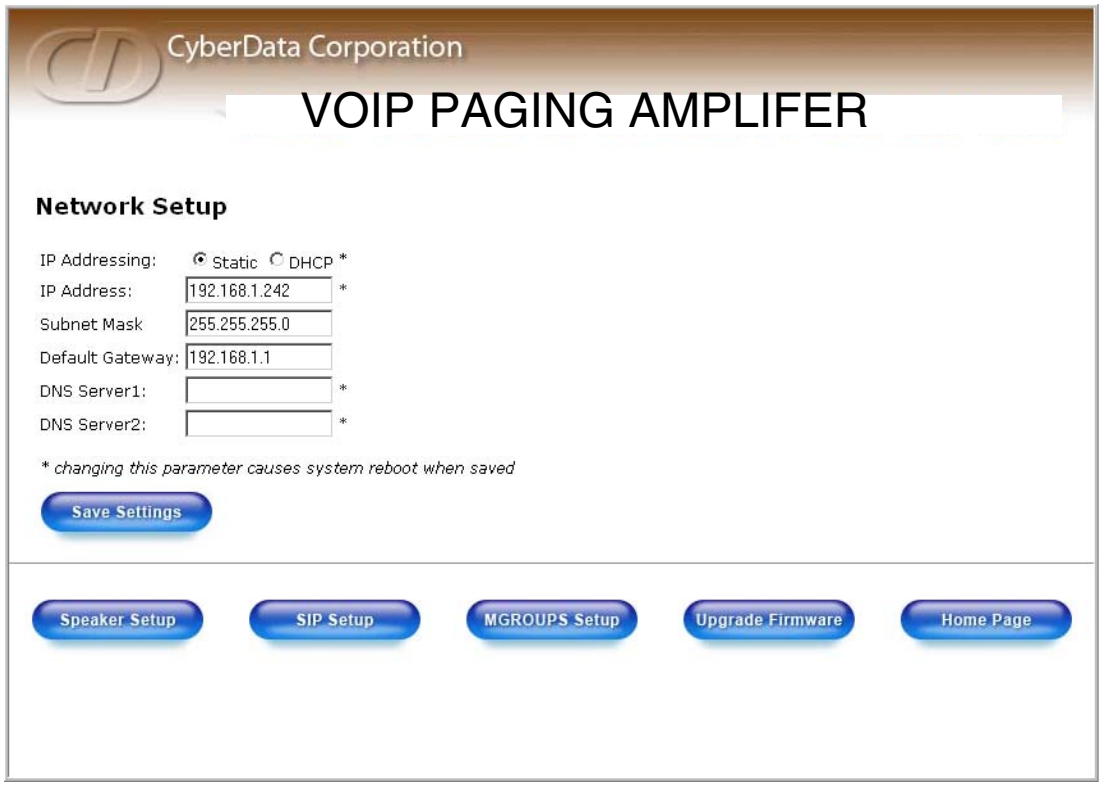
Table 2-8. Home Page Overview

Web Page Item	Description
Upgrade Firmware	Link to the **Upgrade Firmware** web page.

2.3.2 Configure the Network Parameters

1. Click the **Network Setup** button to open the **Network Setup** page (Figure 2-12).

Figure 2-12. Network Setup Page

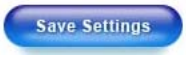


2. On the **Network Setup** page, enter values for the parameters indicated in Table 2-9.

Table 2-9. Network Setup Parameters

Web Page Item	Description
IP Addressing*	Select either **DHCP IP Addressing** or **Static IP Addressing** by marking the appropriate radio button. If you select **Static**, configure the remaining parameters indicated in Table 2-9. If you select **DHCP**, go to Step 3.
IP Address*	Enter the static IP address.
Subnet Mask	Enter the Subnet Mask address.
Default Gateway	Enter the Default Gateway address.
DNS Server 1*	Enter the DNS Server 1 address.

Table 2-9. Network Setup Parameters

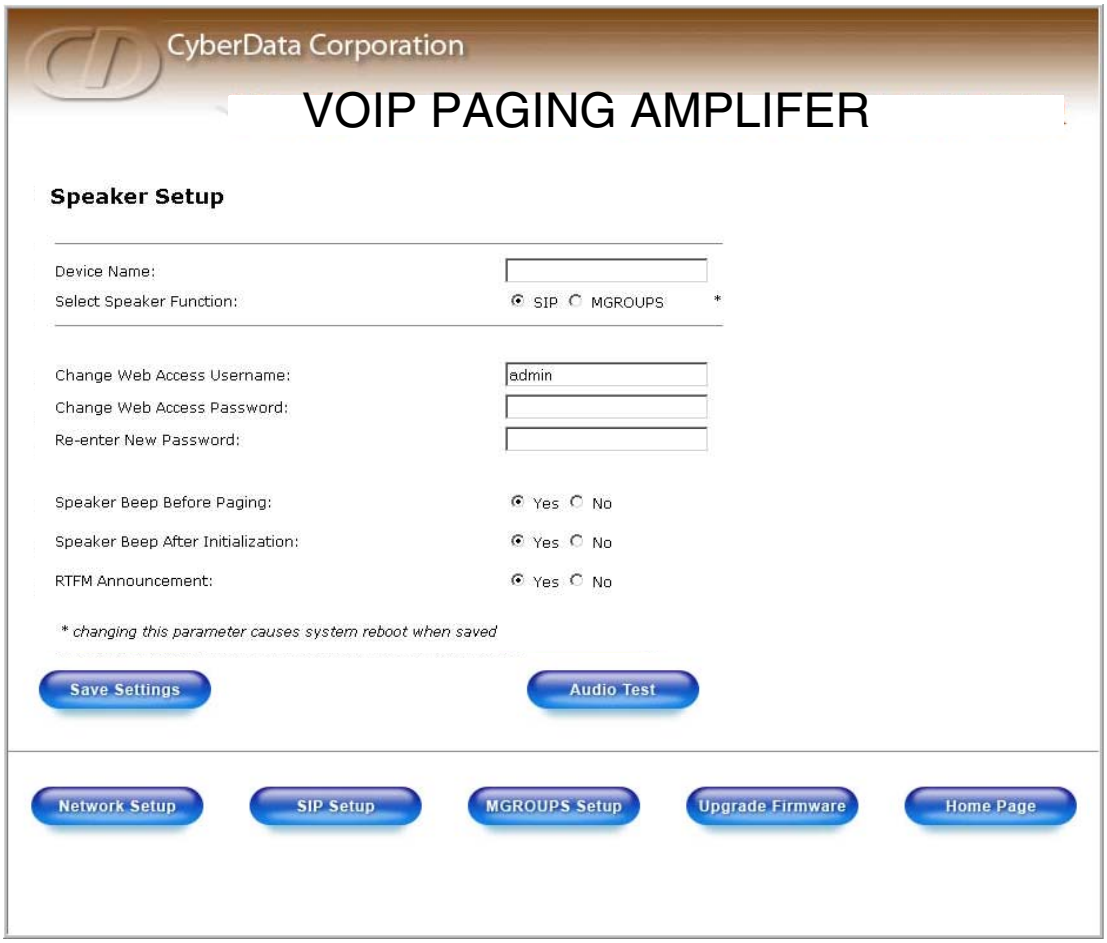
Web Page Item	Description
DNS Server 2*	Enter the DNS Server 2 address.
	Click this button to save your configuration settings. Changing a parameter that has an asterisk next to it will cause a system reboot when saved.
	Link to the **Speaker Setup** page.
	Link to the **SIP Setup** page.
	Link to the **MGROUPS Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

3. After changing the parameters, click **Save Settings**. This updates the changed parameters and reboots the speaker if appropriate.
4. Connect the speaker to the target network.
5. From a system on the same network as the speaker, open a browser with the new IP address of the speaker.

2.3.3 Set up the Paging Amplifier

1. Click the **Speaker Setup** button to open the **Speaker Setup** page.

Figure 2-13. Paging Amplifier Setup



2. On the **Paging Amplifier Setup** page, enter values for the parameters indicated in Table 2-10.

Table 2-10. Paging Amplifier Setup Parameters

Web Page Item	Description
Device Name	Enter a descriptive name for this device (if desired).
Select Speaker Function	Select SIP or MGROUPS.
Change Web Access Username	Use this field to change the Web Access Username.
Change Web Access Password	Use this field to change the Web Access Password.
Re-enter New Password	Use this field to re-enter a new password.
Speaker Tone Before Paging	Enable/Disable the speaker tone (beep) before each page.
Speaker Tone After Initialization	Enable/Disable the speaker tone (beep) after the system startup.

Table 2-10. Paging Amplifier Setup Parameters

Web Page Item	Description
RTFM Announcement[a]	Enable/Disable the speaker tone (beep) and audio associated with the RTFM switch.
Save Settings	Click on this button to save your configuration settings. Changing a parameter that has an asterisk next to it will cause a system reboot when saved.
Audio Test	Click on this button to do an audio test. Generates a voice message for testing the speaker audio quality and volume.
Network Setup	Link to the **Network Setup** page.
SIP Setup	Link to the **SIP Setup** page.
MGROUPS Setup	Link to the **MGROUPS Setup** page.
Upgrade Firmware	Link to the **Upgrade Firmware** page.
Home Page	Link to the **Home Page** page.

a.If you select **No** for **RTFM Announcement**, you will not hear a beep or associated RTFM audio. However, the return to default settings function remains active. If you wish to return to default settings, hold the RTFM button at least 20 seconds, then release the button.

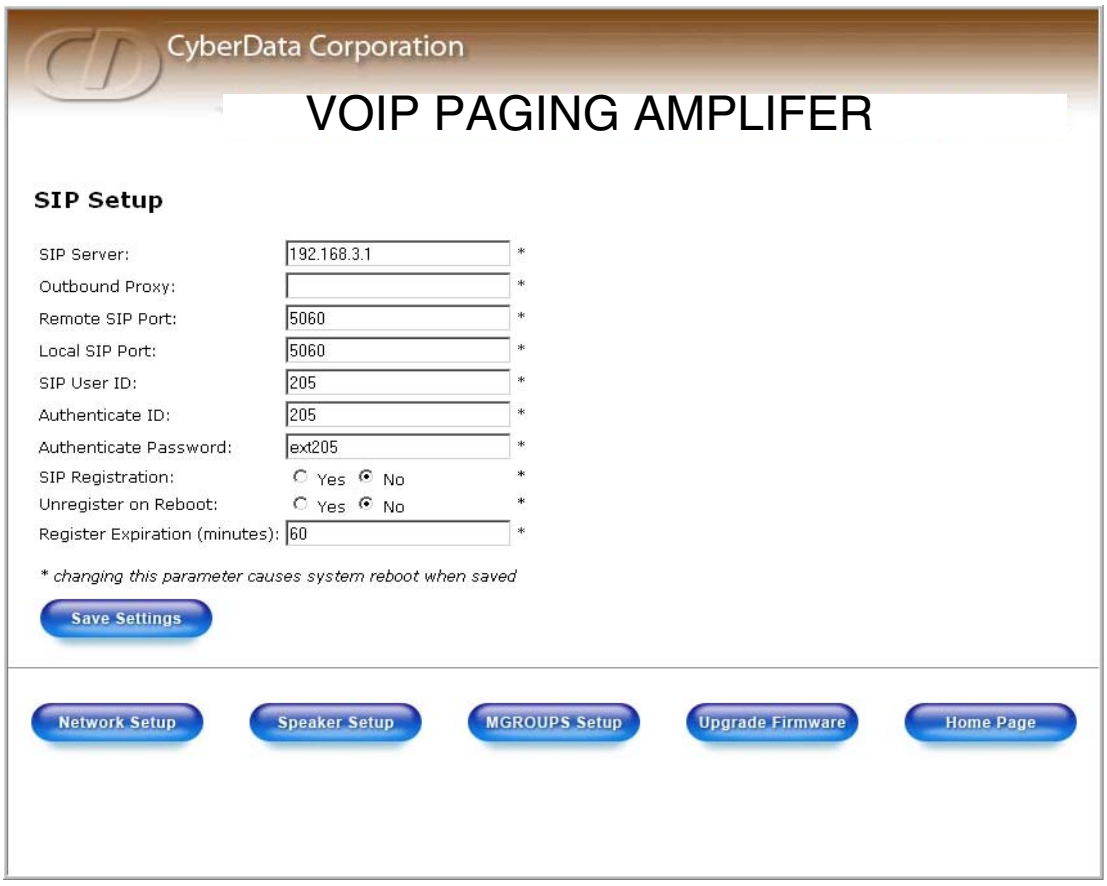
3. After changing the parameters, click **Save Settings**.

2.3.4 Configure the SIP Parameters

1. Click **SIP Setup** to open the **SIP Setup** page (Figure 2-14).

Note For specific server configurations, go to the following URL:
http://www.cyberdata.net/support/voip/index.html

Figure 2-14. SIP Setup Page



2. On the **SIP Setup** page, enter values for the parameters indicated in Table 2-11.

Table 2-11. SIP Setup Parameters

Web Page Item	Description
SIP Server*	Enter the SIP server represented as either a numeric IP address in dotted decimal notation or the fully qualified host name (FQHN) up to 64 characters.
Outbound Proxy	Enter the Outbound Proxy as either a numeric IP address in dotted decimal notation or the fully qualified host name (FQHN) up to 64 characters.
Remote SIP Port*	Enter the **Remote SIP Port** number (default 5060).
Local SIP Port*	Enter the **Local SIP Port** number (default 5060).
SIP User ID*	Enter the **SIP User ID** (up to 25 alphanumeric characters).
Authenticate ID*	Enter the **Authenticate ID** (up to 25 alphanumeric characters).
Authenticate Password*	Enter the **Authenticate Password** (up to 25 alphanumeric characters).
SIP Registration*	Enable/Disable SIP Registration.
Unregister on Reboot*	• Select **Yes** to automatically unregister the paging amplifier when it is rebooted. • Select **No** to keep the paging amplifier registered when it is rebooted.
Register Expiration*	Enter the SIP Registration lease time in minutes (default 60 minutes).
	Click this button to save your configuration settings. Changing a parameter that has an asterisk next to it will cause a system reboot when saved.
	Link to the **Speaker Setup** page.
	Link to the **MGROUPS Setup** page.
	Link to the **Network Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

3. After changing the parameters, click **Save Settings**.

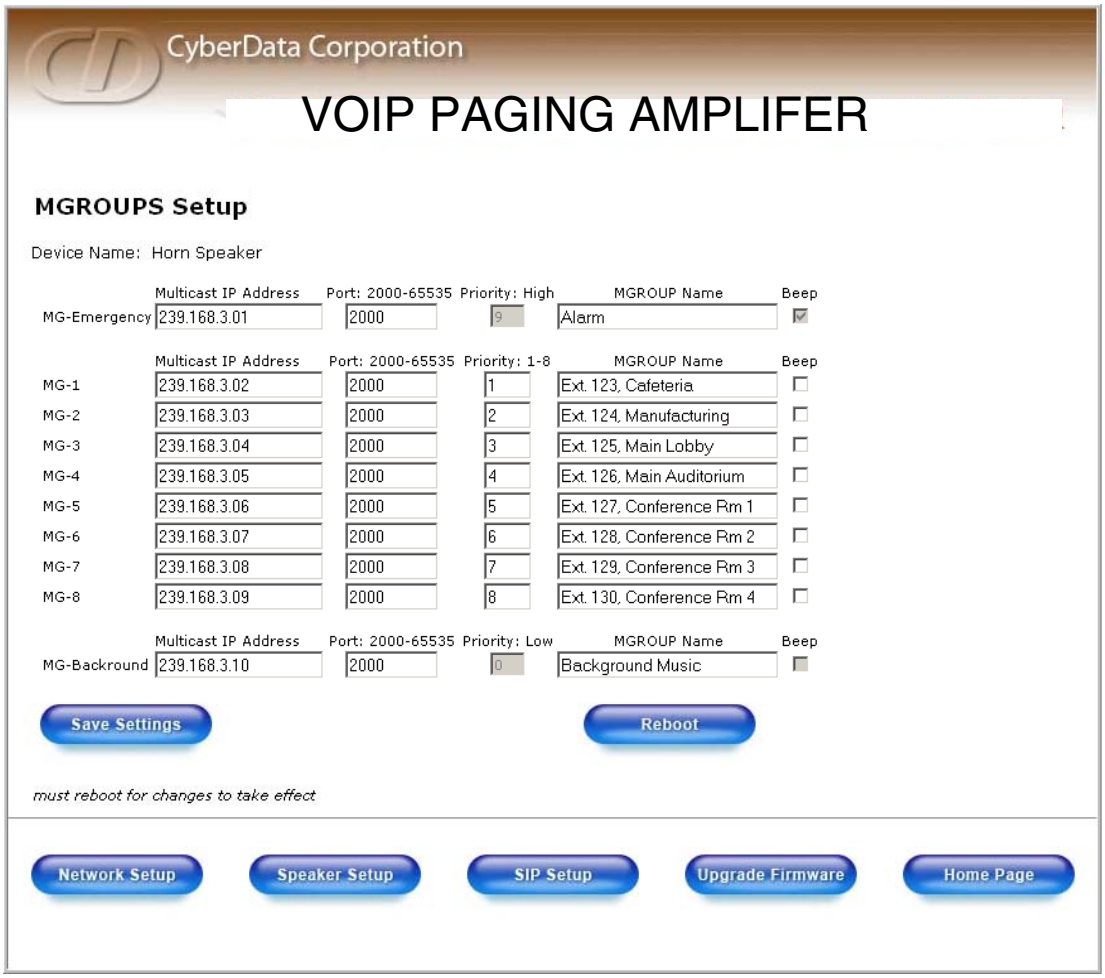
2.4 Set up the MGROUPS

MGROUPS uses multicasting to create Public Address Paging Zones. Multicasting is based on the concept of a group. Multicast addresses specify an arbitrary group of IP hosts that have joined the group and want to receive traffic sent to the group. Group members send IGMP messages to their local multicast routers, allowing the group traffic traversal from the source.

MGROUPS Setup provides the ability to join up to 10 Paging Zones. A Paging Zone can consist of one, or many, CyberData MGROUPS-enabled speakers. There is no limit to how many speakers can be in a given Paging Zone. Each MGROUP is defined by a multicast address and port number. Each MGROUP is also assigned a priority, allowing simultaneously arriving pages to be serviced based on importance. MGROUPS are compatible with IGMP through version 3.

1. Click on the **MGROUPS Setup** button to open the **MGROUPS Setup** page. See Figure 2-15.

Figure 2-15. MGROUPS Setup



2. On the **MGROUPS Setup** page, enter values for the parameters indicated in Table 2-12.

Table 2-12. MGROUPS Setup Parameters

Web Page Item	Description
Device Name	Displays the device name.
MG-Emergency	Use MG-Emergency for the MGROUP with the highest priority.
MG-(1-8)	Use MG-(1-8) to assign MGROUPS 1 through 8.
MG-Background	Use MG-Background for the MGROUP with the lowest priority (background audio for example).
Multicast IP Address	Enter the multicast IP Address for this MGROUP.
Port 2000-65535	Enter the port number for this MGROUP.
Priority	Assign the priority to a MGROUP (the higher the number, the higher the priority).
MGROUP Name	Assign a descriptive name for this MGROUP.
Beep	Check this box if you want a beep to precede a page.
	Click this button to save your configuration settings.
	Click this button to reboot the system.
	Link to the **Network Setup** page.
	Link to the **Speaker Setup** page.
	Link to the **SIP Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

3. After changing the parameters, click **Save Settings**.

2.5 Upgrade the Firmware and Reboot the Paging Amplifier

To upload the speaker firmware from your PC:

1. Set up a TFTP server.

   If you do not already have a TFTP server running on your network, see Chapter B, “Setting up a TFTP Server”.

2. Retrieve the latest speaker firmware from the CyberData website: http://www.cyberdata.net/support/voip/index.html

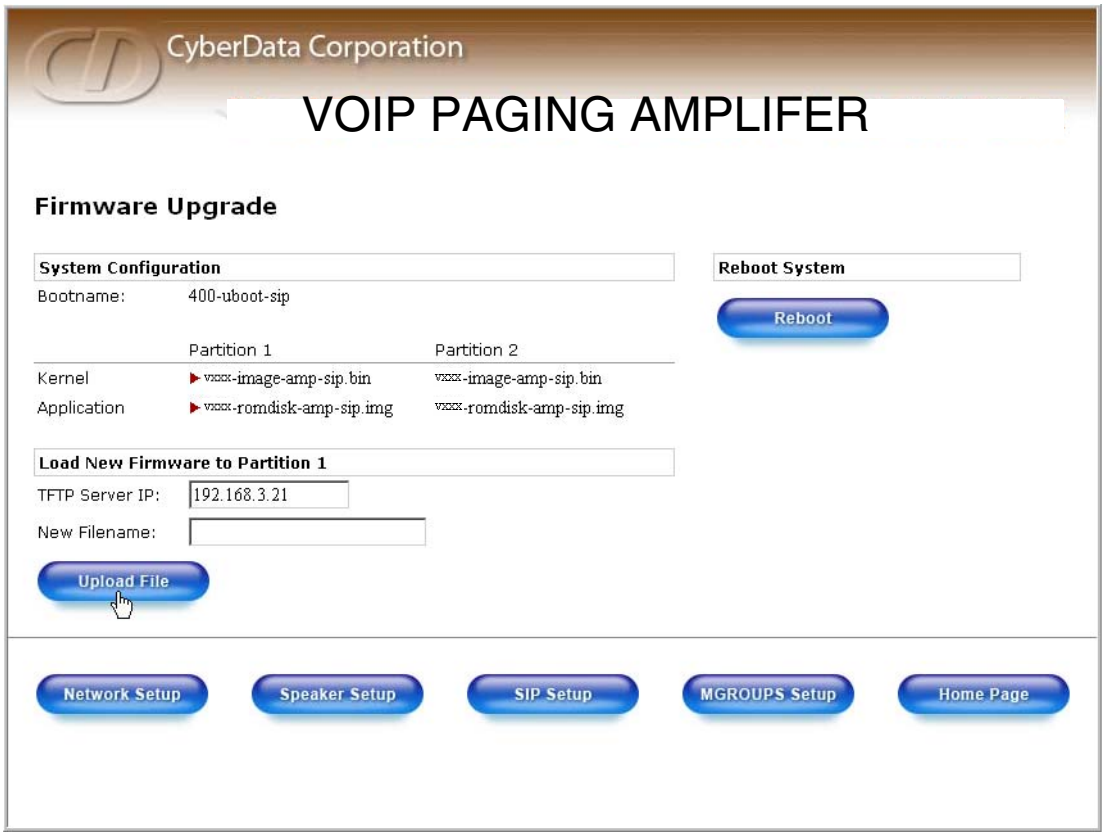
3. Unzip the speaker version file. This file may contain the following:
   - Kernel firmware file: xxx-image-xxx-xxx.bin
   - Application firmware file: xxx-romdisk-xxx-xxx.img
   - Release notes

4. Copy the firmware files to be upgraded to the appropriate TFTP server directory:
   - c:\tftp-root\ (for Windows)
   - /tftpboot/ (for Linux)

5. Log in to the speaker home page as instructed in Section 2.3.1, "Log in to the Configuration Home Page".

6. Click the **Upgrade Firmware** button to open the **Firmware Upgrade** page. See Figure 2-16.

Figure 2-16. Firmware Upgrade Page



7. Enter the IP address of your TFTP server into the **TFTP Server IP** parameter field.
8. Enter the firmware filename of the file to be uploaded into the **New Filename** parameter field.

   For example, kernel filename "201-image-spk-sip.bin".
9. Click **Upload File**.

Note This starts the upload process. Once the speaker has uploaded the file, the **Uploading Firmware** countdown page appears, indicating that the firmware is being written to flash. The speaker will automatically reboot when the upload is complete. When the countdown finishes, the **Firmware Upgrade** page will refresh. The uploaded firmware filename should be displayed in the system configuration (indicating successful upload and reboot).

10. Repeat steps 8 and 9 if you are uploading the **Kernel** and **Application** files.

    For example, **Application** filename "201-romdisk-spk-sip.img".

    Table 2-13 shows the web page items on the **Firmware Upgrade** page.

Table 2-13. Firmware Upgrade Parameters

Web Page Item	Description
System Configuration	Shows the current configuration.
Bootname	Shows the current boot loader filename.
Kernel	Shows the current kernel filename for partition 1 and 2.

Table 2-13. Firmware Upgrade Parameters

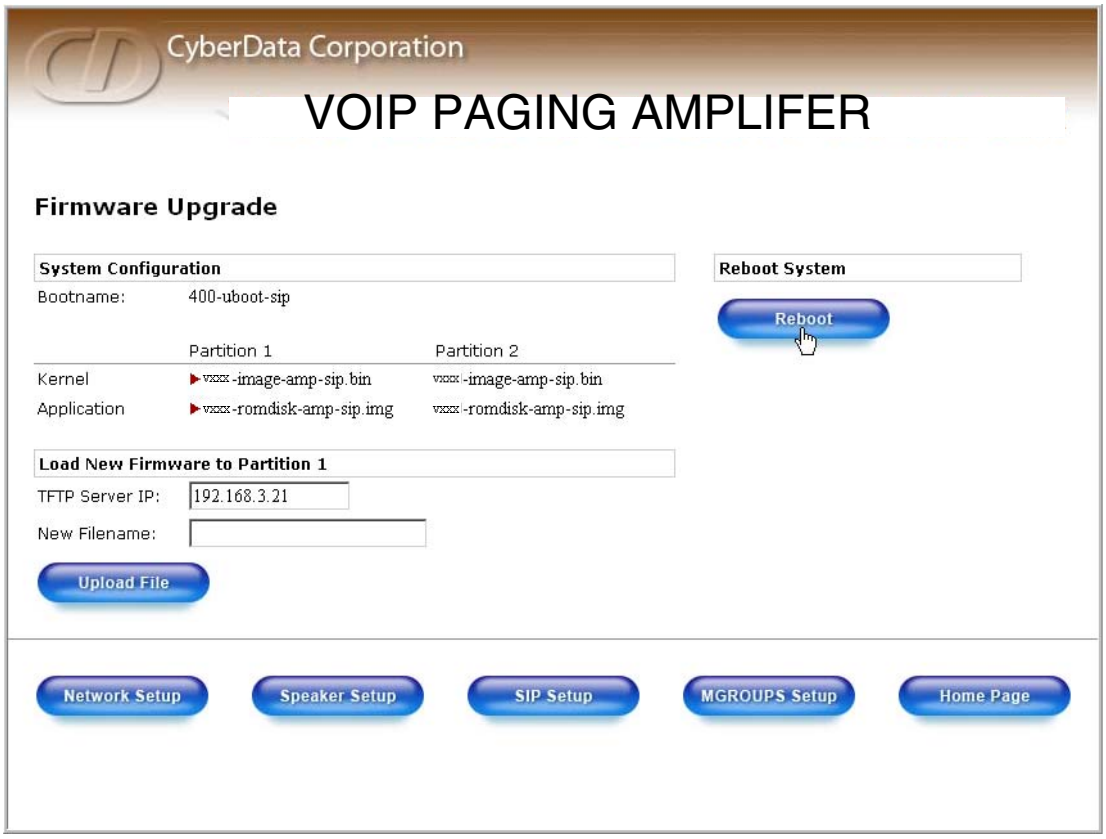
Web Page Item	Description
Application	Shows the current application filename for partition 1 and 2.
Load new firmware to Partition 1	Enter the TFTP Server IP address.
New Filename	Enter the new file name for the kernel or application firmware file that you are uploading.
	Click on this button to automatically upload the selected firmware and reboot the system.
	Link to the **Speaker Setup** page.
	Link to the **Network Setup** page.
	Link to go to the **SIP Setup** page.
	Link to the **MGROUPS Setup** page.
	Link to the **Home** page.
	Click on this button to reboot the system.

2.5.1 Reboot the Paging Amplifier

To reboot a Paging Amplifier, log in to the web page as instructed in Section 2.3.1, "Log in to the Configuration Home Page".

1. Click **Upgrade Firmware** to open the **Firmware Upgrade** page (Figure 2-17). Use the **Reboot System** section on the right side of the page.

Figure 2-17. Reboot System Section



2. Click **Reboot**. A normal restart will occur as per the Status LED section of Table 2-6.

2.6 Restore the Factory Default Settings

When troubleshooting configuration problems, it is sometimes convenient to restore the device to a known state.

Each Paging Amplifier is delivered with factory set default values for the parameters indicated in Table 2-14. Use the **RTFM** switch on the Paging Amplifier face to restore these parameters to the factory default settings.

When you use the RTFM switch, the factory default settings are restored for *only* the parameters indicated in Table 2-14. The other parameters in the current Paging Amplifier configuration will remain unchanged.

Table 2-14. Factory Default Settings

Parameter	Factory Default Setting
IP Addressing	static
IP Address	192.168.3.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask	255.255.255.0
Default Gateway	192.168.3.1

To restore these parameters to the factory default settings:

1. Press and hold the RTFM switch for 20 seconds.
2. The Paging Amplifier will beep after one second. Continue to hold the switch until the Paging Amplifier beeps again after 20 seconds.
3. Release the switch. The following occurs:
   - A voice message announces that the factory default settings are being restored.
   - Once the settings are restored, a voice message announces the restored default IP address:

     `192.168.3.10`

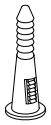
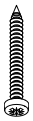
   - A voice message announces that the Paging Amplifier is rebooting.
   - The Paging Amplifier reboots.

Appendix A: Mounting the Amplifier

A.0 Mount the Amplifier

Before you mount the enclosure, make sure that you have received all of the parts for each enclosure. Refer to Table A-15.

Table A-15. Wall Mounting Components (Part of the Accessory Kit)

Quantity	Part Name	Illustration
2	Plastic Ribbed Anchors	
2	#6 Sheet Metal Screws	

Note The Paging Amplifier was designed for indoor use. Mounting it on the external part of a building will require additional hardware for weatherproofing, cabling access, and lightning suppression. Consult a certified electrician for details.

Note For mounting, use the three **#8 SHEET METAL SCREWS** to secure the enclosure.

Appendix B: Setting up a TFTP Server

B.0 Set up a TFTP Server

Upgrading the VoIP Paging Amplifier firmware requires a TFTP server on which you access the Web interface where you can upload the firmware files.

B.0.1 In a LINUX Environment

To set up a TFTP server on LINUX:

1. Create a directory dedicated to the TFTP server, and move the files to be uploaded to that directory.
2. Run the following command where `/tftpboot/` is the path to the directory you created in Step 1: the directory that contains the files to be uploaded. For example:

   ```
   in.tftpd -l -s /tftpboot/your_directory_name
   ```

B.0.2 In a Windows Environment

You can find several options online for setting up a Windows TFTP server. This example explains how to use the Solarwinds freeware TFTP server, which you can download at:

http://www.cyberdata.net/support/voip/index.html

To set up a TFTP server on Windows:

1. Install and start the software.
2. Select **File/Configure/Security** tab/**Transmit Only**.
3. Make a note of the default directory name, and then move the firmware files to be uploaded to that directory.
4. You can find several options online for setting up a Solarwinds server. This example explains how to use the Solarwinds freeware TFTP server, which you can download at:

   http://www.cyberdata.net/support/voip/index.html

Appendix C: Troubleshooting/Technical Support

C.1 Frequently Asked Questions (FAQ)

Go to the following URL to see CyberData's list of frequently asked questions:

http://www.cyberdata.net/support/voip/index.html

C.2 Documentation

The documentation for this product is released in an English language version only. You can download PDF copies of CyberData product documentation at:

http://www.cyberdata.net/support/voip/index.html

C.3 Contact Information

Contact	CyberData Corporation 2555 Garden Road Monterey, CA 93940 USA www.CyberData.net Phone: 800-CYBERDATA (800-292-3732) Fax: 831-373-4193
Sales	Sales (831) 373-2601 Extension 334
Technical Support	Phone: 831-373-2601 Extension 333 Email: support@CyberData.net
Returned Materials Authorization	To return the product, contact the CyberData Returned Materials Authorization (RMA) department at: Phone: 831-373-2601, Extension 136 Email: RMA@CyberData.net When returning a product to CyberData, an approved CyberData RMA number must be printed on the outside of the original shipping package. No product will be accepted for return without an approved RMA number. Send the product, in its original package, to the following address: CyberData Corporation 2555 Garden Road Monterey, CA 93940 Attention: RMA "your RMA number"

C.4 Warranty

CyberData warrants its product against defects in material or workmanship for a period of two years from the date of purchase. Should the product fail within the warranty period, CyberData will repair or replace the product free of charge. This warranty includes all parts and labor.

If the product is out-of-warranty and fails, a flat rate repair charge of one half the product purchase price will be assessed. Repair costs for products that are in warranty, but damaged by improper modifications or abuse, will be charged at the out-of-warranty rate. Products returned to CyberData, both in and out-of-warranty, are shipped to CyberData at the expense of the customer. Charges for shipping repaired products back to the customer will be paid by CyberData.

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